

\$\$\*STN;HighlightOn= \*\*\*;HighlightOff=\*\*\* ;

Connecting via Winsock to STN

Welcome to STN International! Enter x:x

LOGINID:ssspta1633cxq

PASSWORD:

TERMINAL (ENTER 1, 2, 3, OR ?):2

\*\*\*\*\* Welcome to STN International \*\*\*\*\*

NEWS 1 Web Page URLs for STN Seminar Schedule - N. America  
NEWS 2 "Ask CAS" for self-help around the clock  
NEWS 3 FEB 27 New STN AnaVist pricing effective March 1, 2006  
NEWS 4 APR 04 STN AnaVist \$500 visualization usage credit offered  
NEWS 5 MAY 10 CA/CAPLUS enhanced with 1900-1906 U.S. patent records  
NEWS 6 MAY 11 KOREAPAT updates resume  
NEWS 7 MAY 19 Derwent World Patents Index to be reloaded and enhanced  
NEWS 8 MAY 30 IPC 8 Rolled-up Core codes added to CA/CAPLUS and  
USPATFULL/USPAT2  
NEWS 9 MAY 30 The F-Term thesaurus is now available in CA/CAPLUS  
NEWS 10 JUN 02 The first reclassification of IPC codes now complete in  
INPADOC  
NEWS 11 JUN 26 TULSA/TULSA2 reloaded and enhanced with new search and  
display fields  
NEWS 12 JUN 28 Price changes in full-text patent databases EPFULL and  
PCTFULL  
NEWS 13 JUL 07 Coverage of Research Disclosure reinstated in DWPI  
NEWS 14 JUL 11 CHEMSAFE reloaded and enhanced  
NEWS 15 JUL 14 FSTA enhanced with Japanese patents

NEWS EXPRESS JUNE 30 CURRENT WINDOWS VERSION IS V8.01b,  
CURRENT  
MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),  
AND CURRENT DISCOVER FILE IS DATED 26 JUNE 2006.

NEWS HOURS STN Operating Hours Plus Help Desk Availability  
NEWS LOGIN Welcome Banner and News Items  
NEWS IPC8 For general information regarding STN implementation of IPC 8  
NEWS X25 X.25 communication option no longer available

Enter NEWS followed by the item number or name to see news on that  
specific topic.

All use of STN is subject to the provisions of the STN Customer  
agreement. Please note that this agreement limits use to scientific  
research. Use for software development or design or implementation  
of commercial gateways or other similar uses is prohibited and may  
result in loss of user privileges and other penalties.

\*\*\*\*\* STN Columbus \*\*\*\*\*

FILE 'HOME' ENTERED AT 14:16:49 ON 18 JUL 2006

=> FIL EMBASE BIOSIS CAPLUS  
COST IN U.S. DOLLARS SINCE FILE TOTAL  
ENTRY SESSION  
FULL ESTIMATED COST 0.21 0.21

FILE 'EMBASE' ENTERED AT 14:16:52 ON 18 JUL 2006  
Copyright (c) 2006 Elsevier B.V. All rights reserved.

FILE 'BIOSIS' ENTERED AT 14:16:52 ON 18 JUL 2006  
Copyright (c) 2006 The Thomson Corporation

FILE 'CAPLUS' ENTERED AT 14:16:52 ON 18 JUL 2006  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
COPYRIGHT (C) 2006 AMERICAN CHEMICAL SOCIETY (ACS)

=> s sea urchin and insulator  
L1 93 SEA URCHIN AND INSULATOR

=> s I1 and arylsulfatase  
L2 23 L1 AND ARYLSULFATASE

=> dup rem 12  
PROCESSING COMPLETED FOR L2  
L3 14 DUP REM L2 (9 DUPLICATES REMOVED)

=> d bib abs 1-  
YOU HAVE REQUESTED DATA FROM 14 ANSWERS - CONTINUE? Y(N):y

L3 ANSWER 1 OF 14 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2006:545802 CAPLUS <<LOGINID::20060718>>  
TI Ars \*\*\*insulator\*\*\* identified in \*\*\*sea\*\*\* \*\*\*urchin\*\*\*  
possesses an activity to ensure the transgene expression in mouse cells

AU Tajima, Shoji; Shinohara, Keiko; Fukumoto, Maiko; Zaitu, Reiko; Miyagawa,  
Junichi; Hino, Shinjiro; Fan, Jun; Akasaka, Koji; Matsuoka, Masao  
CS Laboratory of Epigenetics, Institute for Protein Research, Osaka  
University, 3-2 Yamadaoka, Suita, Osaka, 565-0871, Japan  
SO Journal of Biochemistry (Tokyo, Japan) (2006), 139(4), 705-714  
CODEN: JOBIAO; ISSN: 0021-924X

PB Japanese Biochemical Society

DT Journal

LA English

AB \*\*\*Sea\*\*\* \*\*\*urchin\*\*\* \*\*\*arylsulfatase\*\*\* (Ars) gene locus  
has features of an \*\*\*insulator\*\*\*, i.e., blocking of enhancer and  
promoter interaction, and protection of a transgene against positional  
effects. To examine the effect of Ars \*\*\*insulator\*\*\* on long-term  
expression of a transgene, the \*\*\*insulator\*\*\* was inserted into LTR  
of retrovirus vector harboring hrGFP gene as a reporter, and then  
introduced into mouse myoblast cells. The isolated clones transduced with  
the reporter gene with or without Ars \*\*\*insulator\*\*\* were cultured  
for more than 20 wk in the absence of a selection reagent, and the  
expression of hrGFP was periodically detd. Expression of hrGFP in four  
clones transduced with the reporter gene without Ars \*\*\*insulator\*\*\*  
was completely silenced after 20 wk of culture. On the other hand, hrGFP  
was expressed in all clones with Ars \*\*\*insulator\*\*\* inserted in one  
of the two different orientations. Histone H3 deacetylation and DNA  
methylation of the 5'LTR promoter region, signs for heterochromatin and  
silencing, were suppressed in the clones that were expressing hrGFP. Ars  
\*\*\*insulator\*\*\* is effective in maintaining a transgene in mouse cells  
in an orientation-dependent manner, and will be a useful tool to ensure  
stable expression of a transgene.

RE.CNT 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS  
RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 2 OF 14 EMBASE COPYRIGHT (c) 2006 Elsevier B.V. All rights  
reserved on STN DUPLICATE 1

AN 2006110533 EMBASE <<LOGINID::20060718>>  
TI \*\*\*Sea\*\*\* \*\*\*urchin\*\*\* \*\*\*arylsulfatase\*\*\* \*\*\*insulator\*\*\*  
exerts its anti-silencing effect without interacting with the nuclear  
matrix.

AU Hino S.; Akasaka K.; Matsuoka M.

CS S. Hino, Department of Genetics, University of North Carolina at Chapel  
Hill, CB# 7264, 103 Mason Farm Rd., Chapel Hill, NC 27599, United States.  
hino@med.unc.edu

SO Journal of Molecular Biology, (17 Mar 2006) Vol. 357, No. 1, pp. 18-27.  
Refs: 33

ISSN: 0022-2836 CODEN: JMOBAK

PUI S 0022-2836(05)01633-5

CY United Kingdom

DT Journal; Article

FS 029 Clinical Biochemistry

LA English

SL English

ED Entered STN: 22 Mar 2006

Last Updated on STN: 22 Mar 2006

AB Chromatin insulators have been shown to stabilize transgene expression.  
Although insulators have been suggested to regulate the subcellular  
localization of chromosomes, it is still unclear whether this property is  
important for their anti-silencing activity. To investigate the  
underlying mechanisms governing the anti-silencing function of insulators,  
we studied the association of \*\*\*sea\*\*\* \*\*\*urchin\*\*\*  
\*\*\*arylsulfatase\*\*\* \*\*\*insulator\*\*\* (Arsl) with the nuclear matrix,  
which is a key component of the subnuclear localization of the genome.  
Arsl did not potentiate the nuclear matrix association with the transgene,  
even though it showed strong anti-silencing activity. This observation  
was in clear contrast to the results of the experiment using a human  
interferon-beta scaffold attachment region, in which the anti-silencing  
effect coincided with the enhanced matrix association. Chromatin  
immunoprecipitation analyses suggested that the absence of the matrix  
binding by Arsl was due to a lack of its binding to CCTC-binding factor  
(CTCF), a protein known to be associated with matrix binding by chicken  
.beta.-globin \*\*\*insulator\*\*\*. Furthermore, Arsl maintained the  
nucleosome occupancy within the transgene at a constant level during  
long-term culture, although Arsl itself was not a nucleosome-excluding  
sequence. Taken together, these results suggest that this  
\*\*\*insulator\*\*\* exerts its anti-silencing activity by counteracting  
silencing-associated factors to maintain local chromatin environment,  
rather than by remodeling the subnuclear localization of the transgene  
locus. .COPYRG. 2005 Elsevier Ltd. All rights reserved.

L3 ANSWER 3 OF 14 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2006:556315 CAPLUS <<LOGINID::20060718>>

TI Unichrom, a novel nuclear matrix protein, binds to the Ars  
\*\*\*insulator\*\*\* and canonical MARs

AU Tagashira, Hideki; Shimotori, Taishin; Sakamoto, Naoki; Katahira, Masato;  
Miyanoiri, Yohei; Yamamoto, Takashi; Mitsunaga-Nakatsubo, Keiko; Shimada,  
Hiraku; Kusunoki, Shinichiro; Akasaka, Koji

CS Department of Mathematical and Life Sciences, Graduate School of Science,  
Hiroshima University, 1-3-1 Kagamiyama, Higashi-Hiroshima, 739-8526, Japan  
SO Zoological Science (2006), 23(1), 9-21

CODEN: ZOSCEX; ISSN: 0289-0003

PB Zoological Society of Japan

DT Journal

LA English

AB Eukaryotic genomic DNA is organized into loop structures by attachments to

the nuclear matrix. These attachments to the nuclear matrix have been supposed to form the boundaries of chromosomal DNA. Insulators or boundary elements are defined by two characteristics: they interrupt promoter-enhancer communications when inserted between them, and they suppress the silencing of transgenes stably integrated into inactive chromosomal domains. We recently identified an \*\*\*insulator\*\*\* element in the upstream region of the \*\*\*sea\*\*\* \*\*\*urchin\*\*\* \*\*\*arylsulfatase\*\*\* (HpArs) gene that shows both enhancer blocking and suppression of position effects. Here, we report that Unichrom, originally identified by its G-stretch DNA binding capability, is a nuclear matrix protein that binds to the Ars \*\*\*insulator\*\*\* and canonical nuclear matrix attachment regions (MARs). We also show that Unichrom recognizes the minor groove of the AT-rich region within the Ars \*\*\*insulator\*\*\*, which may have a base-unpairing property, as well as the G-stretch DNA. Furthermore, Unichrom selectively interacts with poly(dG).cntdot.poly(dC), poly(dA).cntdot.poly(dT) and poly(dAT).cntdot.poly(dAT), but not with poly(dGC).cntdot.poly(dGC). Unichrom also shows high affinity for single-stranded G- and C-stretches. We discuss the DNA binding motif of Unichrom and the function of Unichrom in the nuclear matrix.

RE.CNT 85 THERE ARE 85 CITED REFERENCES AVAILABLE FOR THIS RECORD

#### ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 4 OF 14 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:634058 CAPLUS <<LOGINID::20060718>>

DN 141:168979

TI Transposon-based \*\*\*insulator\*\*\* element-containing gene delivery systems for use in gene therapy

IN Hackett, Perry B.; Mcivor, Scott; Clark, Karl J.; Caldovic, Luba

PA Discovery Genomics, Inc., USA

SO PCT Int. Appl., 84 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2004065581	A2	20040805	WO 2004-US977	20040115
WO 2004065581	A3	20060119		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
US 2004203158	A1	20041014	US 2004-758237	20040115
PRAI US 2003-440125P	P	20030115		

AB A new gene therapy vectors are described which contain insulating genetic elements to inhibit the unwanted transcription of host genes. More particularly the invention describes a method for using the insulating elements in conjunction with transformation using transposons. Certain embodiments are directed to using an \*\*\*insulator\*\*\* element in a transposon having at least one transcriptional unit and at least one \*\*\*insulator\*\*\* element. The transcriptional unit(s) may be flanked by at least one \*\*\*insulator\*\*\* element on each side. The transcriptional unit may include an exogenous nucleic acid for introduction into a cell, e.g., DNA encoding a marker mol. The \*\*\*insulator\*\*\* element may include a binding site for a CTCF protein. And, for example, a transcriptional unit may be disposed between a first \*\*\*insulator\*\*\* element and a second \*\*\*insulator\*\*\* element, and the first \*\*\*insulator\*\*\* element and the second \*\*\*insulator\*\*\* element may be disposed between inverted repeats of a transposon. The exogenous nucleic acid may be, e.g., DNA encoding an antisense RNA or siRNA.

L3 ANSWER 5 OF 14 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:355082 CAPLUS <<LOGINID::20060718>>

DN 140:369887

TI Gene expression vectors using \*\*\*sea\*\*\* \*\*\*urchin\*\*\* insulators

IN Watanabe, Satoshi; Honma, Daisuke; Yasue, Hiroshi; Akasaka, Koji; Yoshida, Kazuya; Nagaya, Shingo

PA National Institute of Agrobiological Sciences, Japan; Bio-Oriented Technology Research Advancement Institution; University of Hiroshima

SO PCT Int. Appl., 34 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2004035780	A1	20040429	WO 2003-JP13124	20031014
W: CA, US				
RW: DE, FR, GB				
JP 2004135532	A2	20040513	JP 2002-301503	20021016
PRAI JP 2002-301503	A	20021016		

AB Vectors for stable gene expression avoiding the inactivation of a transferred gene by using \*\*\*sea\*\*\* \*\*\*urchin\*\*\* -origin ARS gene insulators. The anti-silencing effect of \*\*\*sea\*\*\* \*\*\*urchin\*\*\*

\*\*\*arylsulfatase\*\*\* (Ars) gene insulators was analyzed in NIH3T3 cells transfected with vectors expressing a marker gene. It was revealed that, by ligating two insulators in a specific direction to an expression cassette, a gene could be stably expressed and the expression level was elevated 130-fold or more compared to the control using no \*\*\*insulator\*\*\*.

RE.CNT 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD

#### ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 6 OF 14 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:837396 CAPLUS <<LOGINID::20060718>>

DN 141:326787

TI Insertion of \*\*\*insulator\*\*\* from \*\*\*Sea\*\*\* \*\*\*urchin\*\*\* arylsulcatase gene into viral vector to reduce silencing during transfection

IN Matsuoka, Masao; Akasaka, Koji

PA Kyoto University, Japan

SO Jpn. Kokai Tokkyo Koho, 12 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2004283067	A2	20041014	JP 2003-78202	20030320
JP 3731054	B2	20060105		
US 2005042204	A1	20050224	US 2003-667359	20030923
PRAI JP 2003-78202	A	20030320		

AB This invention provides a method to reduce gene silencing during transfection of animal using viral vector, such as lentivirus and retrovirus vector. A 575 bp arylsulcatase gene fragment from \*\*\*Sea\*\*\* \*\*\*urchin\*\*\* was inserted into the viral vector in antisense direction. The method provided in this invention can be used for stabilization of viral vector in gene therapy.

L3 ANSWER 7 OF 14 EMBASE COPYRIGHT (c) 2006 Elsevier B.V. All rights reserved on STN

AN 2004239926 EMBASE <<LOGINID::20060718>>

TI \*\*\*Sea\*\*\* \*\*\*urchin\*\*\* \*\*\*insulator\*\*\* protects lentiviral vector from silencing by maintaining active chromatin structure.

AU Hino S.; Fan J.; Tagawa S.; Akasaka K.; Matsuoka M.

CS M. Matsuoka, Laboratory of Virus Immunology, Institute for Virus Research, Kyoto University, 53 Shogoin-Kawahara-cho, Sakyo-ku, Kyoto 606-8507, Japan

SO Gene Therapy, (2004) Vol. 11, No. 10, pp. 819-828.

Refs: 53

ISSN: 0969-7128 CODEN: GETHEC

CY United Kingdom

DT Journal; General Review

FS 004 Microbiology

022 Human Genetics

LA English

SL English

ED Entered STN: 17 Jun 2004

Last Updated on STN: 17 Jun 2004

AB Suppressed expression of transgenes in vivo is the major obstacle in the gene therapy. For the long-term expression, we utilized a chromatin \*\*\*insulator\*\*\* from \*\*\*sea\*\*\* \*\*\*urchin\*\*\* \*\*\*arylsulfatase\*\*\* (Ars) gene locus (Ars \*\*\*insulator\*\*\*, Arsl), which has been shown to epigenetically regulate gene expression across species. Arsl was able to prevent silencing of the transgene in a myeloid cell line, HL-60, and a murine embryonic stem cell line, CCE, in an orientation-dependent manner, but not in Huh-7, K562 and MCF-7 cells, indicating that the effect of Arsl on gene silencing was cell type dependent. Although anti-silencing effect of Arsl was almost equivalent to that of chicken .beta.-globin \*\*\*insulator\*\*\*, incorporation of Arsl into lentiviral vector had little effect on the virus titer compared with chicken .beta.-globin \*\*\*insulator\*\*\*. Clonal analysis of transduced HL-60 cells revealed that Arsl protects the lentiviral vector from position effects regardless of its orientation. Furthermore, chromatin immunoprecipitation assays revealed that a high acetylation level was observed in the promoter of the insulated vector, whereas that of Arsl was independent of its anti-silencing capacity. In addition to it having little deteriorative effect on the virus titer, the identified anti-silencing effect of Arsl suggested its possibility for application in gene therapy. .COPYRGT. 2004 Nature Publishing Group All rights reserved.

L3 ANSWER 8 OF 14 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN

AN 2003:369006 BIOSIS <<LOGINID::20060718>>

DN PREV200300369006

TI Incorporation of Chromatin \*\*\*Insulator\*\*\* from \*\*\*Sea\*\*\* \*\*\*Urchin\*\*\* \*\*\*Arylsulfatase\*\*\* Gene into Lentiviral Vector Improves Expression in Myeloid Progenitor Cells.

AU Hino, Shinjiro [Reprint Author]; Jun, Fan; Tagawa, Shuhei; Akasaka, Kouji; Matsuoka, Masao

CS Laboratory of Virus Immunology, Institute for Virus Research, Kyoto University, Kyoto City, Kyoto, Japan

SO Blood, (November 16 2002) Vol. 100, No. 11, pp. Abstract No. 5522. print. Meeting Info.: 44th Annual Meeting of the American Society of Hematology. Philadelphia, PA, USA. December 06-10, 2002. American Society of Hematology.

CODEN: BLOOAW. ISSN: 0006-4971.

DT Conference; (Meeting)  
Conference; (Meeting Poster)  
Conference; Abstract; (Meeting Abstract)

LA English  
ED Entered STN: 13 Aug 2003  
Last Updated on STN: 13 Aug 2003

AB Lentiviral vector has been extensively developed as a vehicle of therapeutic genes. Although this vector assures efficient gene delivery, its expression depends on the site of integration in the host genome (position effect) and/or is attenuated during long-term incubation due to epigenetic alterations (silencing). These two phenomena, especially silencing may be a significant obstacle to gene therapy applications since correction of genetic disorders should require life-long expression of therapeutic genes. Chromatin \*\*\*insulator\*\*\* is a DNA sequence that serves as boundary element between differentially regulated genes. It has been proposed that a region flanked by a pair of insulators is isolated from the host chromosomal environment and consequently protected from epigenetic alterations. Among number of identified insulators, the one from \*\*\*sea\*\*\* \*\*\*urchin\*\*\* \*\*\*arylsulfatase\*\*\* gene locus, (ARS \*\*\*insulator\*\*\* : ARSI) has been shown to function across the species. Therefore, in order to develop a lentiviral vector that enables long-term expression, we incorporated ARSI into HIV-1 based vector. ARSI was introduced to 3' LTR/3' region in sense and anti-sense orientation so that the reporter gene would be flanked by a pair of ARSIs during provirus formation. Insertion of ARSI did not affect the virus titer and ARSI sequence remained intact after integration into the host chromosome. ARSI was able to prevent transgene silencing in HL-60 myeloid progenitor cells in orientation dependent manner. However, it failed to affect silencing in Huh-7 hepatocellular carcinoma cells and K562 erythroid cells indicating that effect of ARSI on transgene silencing is cell-type dependent. Clonal analysis of transduced HL-60 cells revealed that ARSI protects lentiviral vector from position effect regardless of the ARSI orientation suggesting the different actions of ARS on silencing and position effect. We also tested whether ARSI can prevent silencing triggered by cellular differentiation in HL-60 cells. ARSI failed to maintain expression from lentiviral vectors after granulocytic differentiation of HL-60 cells. Furthermore, to clarify the relationship between silencing protection and epigenetic modifications, we performed chromatin immunoprecipitation assay using anti-acetylated histone antibody. ARSI from silenced vector showed similar level of histone acetylation, compared with the one from non-silenced vector. This result suggests that recruitment of histone acetylase and/or rejection of histone deacetylase is not sufficient for protection against silencing. Taken together, these results showed that ARSI enabled the long-term expression from lentiviral vector. Since the effect of \*\*\*insulator\*\*\* is cell-type dependent, exploration for active \*\*\*insulator\*\*\* in each hematopoietic cell lineage may help to innovate the efficient gene therapy.

L3 ANSWER 9 OF 14 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN

AN 2001:492330 BIOSIS <<LOGINID::20060718>>  
DN PREV200100492330

TI Method of stable gene expression in a transgenic plant utilizing an \*\*\*insulator\*\*\* nucleotide sequence from the \*\*\*sea\*\*\* \*\*\*urchin\*\*\* \*\*\*arylsulfatase\*\*\* gene.

AU Shinmyo, Atsuhiko [Inventor; Reprint author]; Yoshida, Kazuya [Inventor]; Kato, Ko [Inventor]; Akasaka, Koji [Inventor]; Kusumi, Takaaki [Inventor]; Tanaka, Yoshikazu [Inventor]

CS Ikoma-gun, Japan  
ASSIGNEE: Nara Institute of Science and Technology, Japan

PI US 6229070 20010508

SO Official Gazette of the United States Patent and Trademark Office Patents, (May 8, 2001) Vol. 1246, No. 2, e-file.  
CODEN: OGPU7. ISSN: 0098-1133.

DT Patent  
LA English  
ED Entered STN: 24 Oct 2001

Last Updated on STN: 23 Feb 2002

AB A method for the stable expression of an introduced exogenous gene in a plant or plant cell is provided. Stable expression of an exogenous gene that was introduced was achieved by operably linking an upstream sequence of \*\*\*sea\*\*\* \*\*\*urchin\*\*\* \*\*\*arylsulfatase\*\*\* gene as an \*\*\*insulator\*\*\*.

L3 ANSWER 10 OF 14 EMBASE COPYRIGHT (c) 2006 Elsevier B.V. All rights reserved on STN DUPLICATE 3

AN 2001163966 EMBASE <<LOGINID::20060718>>  
TI An \*\*\*insulator\*\*\* element from the \*\*\*sea\*\*\* \*\*\*urchin\*\*\*

Hemicentrotus pulcherrimus suppresses variation in transgene expression in cultured tobacco cells.

AU Nagaya S.; Yoshida K.; Kato K.; Akasaka K.; Shinmyo A.  
CS K. Yoshida, Grad. School of Biological Sciences, Nara Inst. of Science and Technology, Ikoma, Nara 630-0101, Japan. kazzi@bs.aist-nara.ac.jp

SO Molecular and General Genetics, (2001) Vol. 265, No. 3, pp. 405-413.

Refs: 34  
ISSN: 0026-8925 CODEN: MGGEAE

CY Germany  
DT Journal; Article  
FS 029 Clinical Biochemistry

LA English  
SL English  
ED Entered STN: 23 May 2001

Last Updated on STN: 23 May 2001

AB Specialized DNA sequences known as insulators protect genes from both the positive and negative influences of nearby chromatin. Many insulators have been identified in various species; however, few function in multiple species. We have shown that an \*\*\*insulator\*\*\* from the Ars (\*\*\*arylsulfatase\*\*\* ) gene of the \*\*\*sea\*\*\* \*\*\*urchin\*\*\* Hemicentrotus pulcherrimus functions in plant cells. Normally, expression of an introduced chimeric GUS gene is inactivated in approximately 30% of transformed tobacco BY2 clones. Transgenes containing the Ars \*\*\*insulator\*\*\*, however, were expressed in all transformed tobacco BY2 cells. The \*\*\*insulator\*\*\* did not affect the copy number, the chromosomal position of transgene integration or maximum expression levels. These results suggest that the \*\*\*insulator\*\*\* functions to suppress the variation normally associated with transgene expression in tobacco BY2 cells.

L3 ANSWER 11 OF 14 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2000:585282 CAPLUS <<LOGINID::20060718>>

DN 133:160578

TI Method of gene transfection for stable expression of transgene in plants by simultaneous introduction of \*\*\*sea\*\*\* \*\*\*urchin\*\*\* \*\*\*arylsulfatase\*\*\* gene \*\*\*insulator\*\*\*

IN Niina, Atsuhiko; Yoshida, Kazuya; Kato, Akira; Akasaka, Koji; Kusumi, Takaaki; Tanaka, Yoshikazu

PA Nara Advanced Science Technology Institute, Japan  
SO Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXAF

DT Patent  
LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2000228925	A2	20000822	JP 1999-253174	19990907
JP 3777416	B2	20060524		
US 6229070	B1	20010508	US 1999-444570	19991119
PRAI JP 1998-349625	A	19981209		
JP 1999-253174	A	19990907		

AB A method of gene transfection for stable expression of transgene in plants by simultaneous introduction of an \*\*\*insulator\*\*\*, and plant transformed by the method, Torenia fournieri, in particular, is claimed. \*\*\*Insulator\*\*\* DNAs functionally isolate neighboring genes by blocking interactions between distal cis regulatory elements and promoters. Here the authors report that a DNA fragment located in the upstream region of \*\*\*sea\*\*\* \*\*\*urchin\*\*\*, H. pulcherrimus, \*\*\*arylsulfatase\*\*\* (HpArs) gene blocks the interaction of the Ars enhancer when positioned between the enhancer and the target promoter, in an orientation dependent manner. In BY2 cultured tobacco cells, introduction of \*\*\*sea\*\*\* \*\*\*urchin\*\*\* \*\*\*insulator\*\*\* into transgene (GUS reporter gene) construct at 5' upstream region or 5' upstream and 3' downstream regions, resulted in stable expression of transgene integrated into chromosome of host plant, suggesting the \*\*\*sea\*\*\* \*\*\*urchin\*\*\* \*\*\*insulator\*\*\* overcomes the position-dependent transgene expression in plant cells.

L3 ANSWER 12 OF 14 EMBASE COPYRIGHT (c) 2006 Elsevier B.V. All rights reserved on STN DUPLICATE 4

AN 2000361294 EMBASE <<LOGINID::20060718>>  
TI Evaluation of heterologous \*\*\*insulator\*\*\* function with regard to chromosomal position effect in the mouse blastocyst and fetus.

AU Takada T.; Iida K.; Akasaka K.; Yasue H.; Torii R.; Tsujimoto G.; Taira M.; Kimura H.

CS T. Takada, Department of Experimental Radiology, Shiga University of Medical Science, Ohtsu, Shiga, 520-2192, Japan. ttakada@belle.shiga-med.ac.jp

SO Molecular Reproduction and Development, (2000) Vol. 57, No. 3, pp. 232-237.

Refs: 23

ISSN: 1040-452X CODEN: MREDEE

CY United States

DT Journal; Article

FS 021 Developmental Biology and Teratology

022 Human Genetics

LA English

SL English

ED Entered STN: 2 Nov 2000

Last Updated on STN: 2 Nov 2000

AB Insulators are located at the boundaries of differentially regulated genes and delimit their interactions by establishing independent chromatin structures. Recently, an \*\*\*insulator\*\*\* sequence has been found in the 5'-flanking region of \*\*\*arylsulfatase\*\*\* (ARS) gene from \*\*\*sea\*\*\* \*\*\*urchin\*\*\*. To investigate functional conservation of this ARS \*\*\*insulator\*\*\* in mice, we performed blastocyst assays to evaluate the effect of this \*\*\*insulator\*\*\* on the chromosomal position effect, quantitatively. We constructed transgenes that have a luciferase gene under the control of the CMV-IE enhancer and the human elongation factor 1.alpha. promoter in the presence or absence of the ARS \*\*\*insulator\*\*\* in both flanking regions. These transgenes were microinjected into 1-cell mouse embryos and luciferase activity was measured at the blastocyst stage. We found that the presence of ARS \*\*\*insulator\*\*\* sequence doubled the number of luciferase-expressing blasto- and that the proportion of the blastocysts with cysts, high-level expression (gtoreq. 1 x 104 relative light units (RLU)) was increased more than tenfold. In the case of transgenic fetuses, however, the

presence of ARS \*\*\*insulator\*\*\* did not seem to improve transgene expression. These results suggest that the \*\*\*sea\*\*\* \*\*\*urchin\*\*\* ARS \*\*\*insulator\*\*\* confers position-independent expression driven by the human elongation factor 1.alpha. promoter, at least in the blastocyst stage of the mouse. (C) 2000 Wiley-Liss, Inc.

L3 ANSWER 13 OF 14 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
STN  
AN 2000:433479 BIOSIS <<LOGINID::20060718>>  
DN PREV200000433479  
TI Upstream element of the \*\*\*sea\*\*\* \*\*\*urchin\*\*\*  
\*\*\*arylsulfatase\*\*\* gene serves as an \*\*\*insulator\*\*\*  
AU Akasaka, Koji [Reprint author]; Nishimura, Atsuko; Takata, Kazuko; Mitsunaga, Keiko; Mibuka, Fusako; Ueda, Hitoshi; Hirose, Susumu; Tsutsui, Ken; Shimada, Hiraku  
CS Graduate Department of Gene Science, Faculty of Science, Hiroshima University, Kagamiyama, Higashi-Hiroshima, 739-8526, Japan  
SO Cellular and Molecular Biology (Noisy-Le-Grand), (July, 1999) Vol. 45, No. 5, pp. 555-565. print.  
DT Article  
LA English  
ED Entered STN: 11 Oct 2000  
Last Updated on STN: 10 Jan 2002  
AB \*\*\*Insulator\*\*\* DNAs functionally isolate neighboring genes by blocking interactions between distal cis-regulatory elements and promoters. Here we report that a DNA fragment located in the upstream region of \*\*\*sea\*\*\* \*\*\*urchin\*\*\*, H. pulcherrimus, \*\*\*arylsulfatase\*\*\* (HpArs) gene blocks the interaction of the Ars enhancer when positioned between the enhancer and the target promoter, in an orientation dependent manner. The Ars \*\*\*insulator\*\*\* works only 3' to 5' direction and has no significant stimulatory or inhibitory effects on its own promoter. In transgenic Drosophila, the Ars \*\*\*insulator\*\*\* blocks the interaction between even-skipped stripe enhancer and its target promoter. The insulation mechanism operates also unidirectionally in Drosophila. We also show that the efficiency of transformation of HeLa cells is enhanced when the integrated gene is flanked by the Ars \*\*\*insulator\*\*\*, suggesting the \*\*\*sea\*\*\* \*\*\*urchin\*\*\* \*\*\*insulator\*\*\* overcomes the position-dependent transgene expression in mammalian cells. These results demonstrate that the mechanism of action of the \*\*\*insulator\*\*\* has been conserved throughout evolution.

L3 ANSWER 14 OF 14 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
STN  
AN 2000:138591 BIOSIS <<LOGINID::20060718>>  
DN PREV200000138591  
TI Upstream element of the \*\*\*sea\*\*\* \*\*\*urchin\*\*\*  
\*\*\*arylsulfatase\*\*\* gene serves as an \*\*\*insulator\*\*\*  
AU Akasaka, Koji [Reprint author]; Nishimura, Atsuko [Reprint author]; Takata, Kazuko [Reprint author]; Mitsunaga, Keiko [Reprint author]; Mibuka, Fusako [Reprint author]; Ueda, Hitoshi; Hirose, Susumu; Tsutsui, Ken; Shimada, Hiraku [Reprint author]  
CS Graduate Department of Mathematical and Life Sciences, Hiroshima University, Higashi-Hiroshima, 739-8526, Japan  
SO Zoological Science (Tokyo), (Dec., 1999) Vol. 16, No. Suppl., pp. 58. print.  
Meeting Info.: 70th Annual Meeting of the Zoological Society of Japan. Yamagata, Japan. September 27-29, 1999. Zoological Society of Japan. CODEN: ZOSCEX. ISSN: 0289-0003.  
DT Conference; (Meeting)  
Conference; Abstract; (Meeting Abstract)  
LA English  
ED Entered STN: 19 Apr 2000  
Last Updated on STN: 4 Jan 2002

=> FIL STNGUIDE  
COST IN U.S. DOLLARS  
ENTRY SINCE FILE TOTAL  
FULL ESTIMATED COST 54.68 54.89  
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS) SINCE FILE  
TOTAL ENTRY SESSION  
CA SUBSCRIBER PRICE -4.50 -4.50  
FILE 'STNGUIDE' ENTERED AT 14:25:49 ON 18 JUL 2006  
USE IS SUBJECT TO THE TERMS OF YOUR CUSTOMER AGREEMENT  
COPYRIGHT (C) 2006 AMERICAN CHEMICAL SOCIETY, JAPAN SCIENCE  
AND TECHNOLOGY CORPORATION, AND FACHINFORMATIONSZENTRUM  
KARLSRUHE

FILE CONTAINS CURRENT INFORMATION.  
LAST RELOADED: Jul 17, 2006 (20060717/UP).

=>

---Logging off of STN---

=>  
Executing the logoff script...

=> LOG Y

COST IN U.S. DOLLARS  
ENTRY SINCE FILE TOTAL  
FULL ESTIMATED COST 1.44 56.33  
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS) SINCE FILE  
TOTAL ENTRY SESSION  
CA SUBSCRIBER PRICE 0.00 -4.50  
STN INTERNATIONAL LOGOFF AT 14:40:30 ON 18 JUL 2006

# WEST Search History

DATE: Tuesday, July 18, 2006

<b>Hide?</b>	<b>Set Name</b>	<b>Query</b>	<b>Hit Count</b>
<i>DB=PGPB,USPT,JPAB,DWPI; PLUR=YES; OP=ADJ</i>			
<input type="checkbox"/>	L2	L1 and insulat\$	11
<input type="checkbox"/>	L1	sea urchin same arylsulfatase	17

END OF SEARCH HISTORY